INDEX

THEORETICAL AND EXPERIMENTAL CHEMISTRY

Volume 8, Numbers 1-6, 1972

THEORETICAL AND EXPERIMENTAL CHEMISTRY
Volume 8, Numbers 1-6, 1972
(A translation of Teoreticheskaya i Éksperimental'naya Khimiya)

A

Abronin, I. A. - 486
Aleksandrova, S. Ya. - 145
Aleksankin, M. M. - 404, 634, 640
Aliev, R. R. - 200
Almanov, G. A. - 473
Antipova-Karataeva, I. I. - 69, 101

B

Babich, I. L. - 594
Balyavichus, L.- M. Z. - 446, 665
Baranov, S. P. - 105
Baranovskii, V. I. - 499
Bazilevskii, M. V. - 597, 601
Belous, A. V. - 127
Belousov, V. M. - 19, 524
Belyaev, V. A. - 109
Belyavskaya, L. V. - 453
Bersuker, I. B. - 306, 609
Bezrogova, E. V. - 399
Bilevich, K. A. - 211
Bochkarev, V. V. - 575
Bolotin, A. B. - 446, 665
Borisova, N. P. - 303
Borovikov, Yu. Ya. - 626
Bovykin, B. A. - 559
Brattsev, V. A. - 575
Bratushko, Yu. I. - 457
Bronshtein, É. A. - 216
Brotikovskii, O. I. - 653
Bryukher, É. - 170
Bubnov, N. N. - 211
Budnikov, S. S. - 306, 559
Bunyatyan, B. Kh. - 614
Burtseva, L. N. - 336
Bystrov, V. F. - 109
Bzovyi, M. G. - 256

C

Castano, O. - 303
Chernokal'skii, B. D. - 331
Chernyshev, E. A. - 433
Chervinskii, A. Yu. - 163
Chibisov, A. K. - 322, 399
Chplakhyan, G. M. - 346

D

Dadali, V. A. - 79, 121
Dain, B. Ya. - 40
Dalidvchik, F. I. - 6
Delimarskii, Yu. K. - 378, 671
Denisov, G. S. - 679
Dibrova, P. S.- 404, 634
Dimoglo, A. S. - 559
Dmitruk, A. F. - 316
Dobrotin, R. B. - 583
Dolgushin, M. D. - 74
Dyumaev, K. M. - 182

E

Efremov, N. A. - 43
Egorov, Yu. P. - 134, 192, 353, 505, 591, 626
Eremenko, A. M. - 327
Eremenko, S. M. - 40
Ermakova, E. G. - 433
Evtushenko, N. P. - 105, 418

F

Fedotov, N. G. - 383
Feshchenko, N. G. - 626
Fileleeva, L. I. - 404, 634, 640
Filippov, A. P. - 413
Firsova, L. P. - 157
Franchuk, I. F. - 460
Frantsevich, I. N. - 281
Frolov, Yu. L. - 692

G

Gagarin, S. G. - 175, 200
Gaidamaka, S. N. - 351
Ganyuk, L. N. - 696
Gardenina, A. P. - 373
Gavrilov, V. I. - 331
German É. D. - 512
Gershenzon, Yu. M. - 250
Ginzbura, S. F. - 336
Gitis, S. S. - 216
Gol'denfel'd, I. V. - 634, 640
Gol'dfarb, E. I. - 264
Gol'dshtein, I. P. - 579
Gol'teuzen, É. É. - 216
Gorbachev, V. V. - 700
Gordeev, E. P. - 51
Gordenko, R. S. - 533
Gorokhovatskii, Ya. B. - 91, 550, 696
Grachev, V. T. - 182
Gragerov, I. P. - 208
Gribina, I. A.- 423
Grigorishin, P. M. - 256
Grin, L. M. - 64
Grishchenko, V. K. - 440
Grudtsyn, Yu. D. - 216
Gur'yanova, E. N. - 579

I

Ignatenko, A. V. - 268
Iogansen, L. V. - 349
Iroshnikova, N. G. - 575
Ivanov, G. K. - 6

K

Kabachnik, M. I. - 293, 428
Kachan, A. A. - 298
Kalibabchuk, V. A. - 40
Kalinina, L. I. - 460
Kamai, G. Kh. - 331
Kaminker, D. M. - 287
Kaminskii, A. Ya. - 216
Kaminskii, V. A. - 518
Kapkan, L. M. - 163, 565
Kaplan, I. G.- 477
Karimov, Yu. S. - 214, 340
Karyakin, A. V. - 322, 399
Katolichenko, V. I. - 626
Kazanskii, V. B. - 653, 660

Kessenikh, A. V. - 219, 268
Khaustov, V. A. - 319
Khidureli, V. K. - 512
Kholdyakov, N. I. - 200
Khranovskii, V. A. - 591
Khrapov, V. V. - 575
Kimel'fel'd, Ya. M. - 469
Kirpichnikov, P. A. - 264
Kiseleva, V. M. - 499
Kisilenko, A. A. - 505
Knyazhanskii, M. I. - 58, 224
Kochetkova, N. S. - 214
Kochetova, G. I. - 440
Kolbanovskii, Yu. A. - 175
Kompaneets, A. S. - 115
Kon', M. Ya. - 660
Korol', A. N. - 465
Korostyshevskii, I. Z.- 404, 634, 640
Korst, N. N. - 51
Korzhenevskaya, N. G. - 121
Kost', M. V. - 327
Kostikov, Yu. P. - 333
Kostikova, G. P. - 333
Kostromina, N. A. - 85, 170, 688
Kostylev, V. N. - 182
Kotelevets, E. S. - 145
Kotorlenko, L. A. - 373, 449
Koval'chuk, V. N. - 640
Kovalev, I. F. - 453
Kozhushner, M. A. - 43
Kozlov, É. S. - 351
Kozlova, V. A. - 465
Krapov, V. V. - 336
Krasnova, T. L. - 433
Krasnova, V. A. - 394
Krasnyanskii, A. V. - 157
Kruglyak, Yu. A. - 242, 449, 614
Krumgal'z, B. S. - 674, 676
Kryukov, A. I. - 394
Kucher, R. V. - 145, 316
Kudritskaya, Z. G. - 591
Kudryavtseva, I. V. - 676
Kukhtenko, I. I. - 568
Kulik, N. V. - 298
Kurashvili, L. M. - 306
Kurkovskaya, L. N. - 572
Kusel'man, I. I. - 646
Kuts, V. S. - 275
Kuz'min, V. I. - 182
Kuznetsov, A. N. - 51
Kventsel', G. F. - 1

L

Lagut-skaya, L. I. - 79
Lavrushin, V. F. - 64
Lazarev, A. G. - 453
Lazarov, A. V. - 51
Lebedev, S. N. - 140
Leonova, E. V. - 214, 340
Linskii, V. A. - 700
Litinskii, A. I. - 446
Litinskii, A. O. - 665
Litvinenko, L. M. - 121
Lopushanskaya, A. I. - 256
Lukovkin, G. M. - 575
Lutoshkin, V. I. - 449
Lutskii, A. E. - 127, 187
Luzanov, A. V. - 357
Lyashenko, L. V. - 696
Lysenko, Yu. A. - 565
Lyubarskaya, A. É. - 58, 224
Lyubarskii, G. D. - 195
Lyutaya, M. D. - 281

M

Magdesieva, N. N. - 469, 572
Makarov, L. L. - 333
Makova, M. K. - 214, 340
Malkin, I. I. - 151
Mal'kova, T. V. - 388
Mal'tsev, A. K. - 219
Mank, V. V. - 98, 413
Marchenko, V. A. - 682
Markiv, É. Ya. - 91, 550
Mashchenko, A. I. - 660
Maslov, V. G. - 685
Matrosov, E. I. - 293
Matyash, I. V. - 614
Medved', T. Ya. - 293
Medvedev, B. Ya. - 211
Mel'nikova, S. L. - 465
Mestechkin, M. M. - 357
Mikhailov, I. D.- 533
Minaev, B. F. - 311
Minkin, V. I. - 58, 224
Mirskov, R. G. - 692
Mishchenko, K. P. - 676
Misurkin, I. A. - 235
Morozov, V. P. - 453
Mosin, A. M. - 433
Mostovoi, A. B. - 469
Mukhomorov, V. K. - 538
Myasoedov, B. F. - 399

N

Nazarenko, Yu. P. - 457
Nechiporuk, V. V. - 256
Nefedov, O. M. - 219
Negievich, L. A. - 298
Neimark, I. E. - 327
Nemodruk, A. A. - 399
Neronov, Yu. I. - 287
Nikerov, A. É. - 26
Nikiforov, E. A. - 268

O

Okhlobystin, O. Yu. - 211
Olekhnovich, L. P. - 224
Oneida, I. A.- 316
Osipov, A. I. - 140
Ostrovskii, G. M. - 151
Ovchinnikov, A. A. - 235, 620
Ovchinnikova, V. D. - 388

P

Pen'kovskii, V. V. - 505
Perepelkova, T. I. - 579
Piontkovskaya, M. A. - 327
Pisareva, S. A. - 293
Pivnenko, M. S. - 64
Pobedimskii, D. G. - 264
Poddubnaya, M. V. - 230
Pogonina, R. I. - 64
Pogorelyi, V. K. - 208, 568
Pokhodenko, V. D. - 275
Polak, L. S. - 175
Polyakova, L. A. - 211
Potashnikov, Yu. M. - 646
Preuss, H. - 242
Prikhod'ko, M. U. - 671
Prokopenko, V. P. - 208
Propoi, V. I. - 383

R

Rabinovich, V. A. - 26
Rafalovich, M. L. - 609
Rakhimov, Z. - 287
Rasulev, U. Kh. - 95, 544
Rochev, V. Ya. - 692
Rodimova, O. B. - 477
Rokos, I. D. - 524
Romanova, I. B. - 293
Roshchupkin, V. P. - 346
Rotshtein, V. P. - 26
Rygalov, L. N. - 322, 399
Ryl'tsev, E. V. - 134
Rzhevskaya, N. N. - 69, 101

S

Safaryan, M. N.- 260, 365
Samchenko, I. P. - 404, 634
Samitov, Yu. Yu. - 264
Sandul, G. V. - 275
Sarkisov, O. M. - 250, 383

Savel'ev, A. V. - 494
Semenenko, S. V. - 127
Semenii, B. Ya. - 626
Semenova, A. E. - 679
Serebryanskaya, A. I. - 579
Seregin, P. P. - 343
Sergeev, N. M. - 562
Serguchev, Yu. A. - 35, 89
Shapet'ko, N. N. - 572
Shapoval, V. I. - 378
Shatenshtein, A. I. - 579, 682
Sheina, G. G. - 127
Shilov, E. A. - 35, 89
Shipatov, V. T. - 343
Shreibert, A. I. - 446, 665
Shulepov, Yu. V. - 98
Shvets, V. A. - 660
Sidorov, A. N. - 685
Sizova, O. V. - 499
Sklyarevskii, V. V. - 575
Smirnov, L. D. - 182
Snagovskii, Yu. S. - 151, 195
Sokolov, N. D. - 112, 494
Sokolova, I. V. - 319
Sokol'skii, D. V. - 306
Solkan, V. N. - 562
Solodovnikov, S. P. - 428
Spirin, Yu. L. - 440
Stanko, V. I. - 336, 575
Steinschneider, A. J. - 219
Stepanov, E. P. - 575
Stepanov, N. F. - 555
Stetsenko, A. I.- 499
Strelets, M. M. - 195
Stukan, R. A. - 692, 700

T

Tarasevich, A. S. - 134, 192, 353
Tarasevich, Yu. I. - 98, 423
Tentovskaya, V. S. - 331
Terpugova, A. F. - 311, 319
Tikhomirov, V. A. - 597, 601
Timashev, S. F. - 518
Titov, E. V. - 163, 230
Tsentovskii, V. M. - 331
Tsvetkov, Yu. D. - 473
Tumanova, N. Kh. - 671

U

Ukrainskii, I. I. - 1, 242
Urushadze, Z. D. - 512
Ustinov, I. A. - 696
Ustynyuk, Yu. A. - 562

V

Vasilenko, N. N. - 281
Vedeneev, V. I. - 250, 383
Vedmedskaya, A. N. - 565
Vekhter, B. G. - 609, 669
Vinogradov, A. N. - 109
Vlaskov, V. A. - 620
Volkov, S. V. - 105, 418
Vorob'ev, A. F. - 30, 587
Vostrikova, T. N. - 575
Vragova, S. N. - 187
Vrunov, P. A. - 518

Y

Yablonskii, O. P. - 109
Yakushin, F. S. - 682
Yanoshek, R. - 242
Yanovskii, M. I. - 200
Yatsimirskii, K. B. - 13, 85, 204, 418, 457, 509, 529
Yurlova, G. A. - 700

Z

Zaitsev, B. E. - 182
Zandberg, É. Ya. - 95, 544
Zasyadko, O. A. - 692
Zavorokhina, I. A. - 306
Zhelyazkova, B. G. - 204, 529
Zhidomirov, G. M. - 486, 653
Zhilinskii, B. I. - 555
Zhogolev, D. A. - 614
Zhomov, A. K. - 200
Zhurakovskii, E. A. - 281

THEORETICAL AND EXPERIMENTAL CHEMISTRY

Volume 8, Numbers 1-6, 1972

(A translation of Teoreticheskaya i Éksperimental'naya Khimiya)

Volume 8, Number 1 January-February, 1972

	Eng.	Russ.
Electronic Structure of Polyene Chains with an Impurity Atom – I. I. Ukrainskii and G. F. Kventsel'	1	3
Energy Levels in a Field of Fixed Centers of Interaction – F. I. Dalidvhik and G. K. Ivanov	6	9
Mechanisms of Homogeneous-Catalytic Oxidation–Reduction Reactions and the Graph Method – K. B. Yatsimirskii	13	17
Kinetic Characteristics of Gaseous Reactions in a Nonstationary State of a Heterogeneous Catalyst – V. M. Belousov	19	24
Real Thermodynamic Activity of Ions of One Kind as a Basis for Construction of a Single Scale of Ionic Activities – V. A. Rabinovich, A. É. Nikerov, and V. P. Rotshtein	26	32
Correlation of Thermochemical Properties of Electrolyte Solutions in Various Solvents – A. F. Vorob'ev	30	37
Reactivity of π- and p-Donor Complexes of Bromine in the Reaction with 1-Hexene in Benzene – Yu. A. Serguchev and E. A. Shilov	35	44
Donor–Acceptor Interactions of Excited Molecules with a Solvent – B. Ya. Dain, S. M. Eremenko, and V. A. Kalibabchuk	40	49
Contribution to the ESR Line-Saturation Theory with Anisotropic Broadening Due to Hyperfine Interaction – N. A. Efremov and M. A. Kozhushner	43	53
Shape of the ESR Spectrum of Radicals in Viscous Media – N. N. Korst, A. N. Kuznetsov, A. V. Lazarov, and E. P. Gordeev	51	63
Electronic Adsorption and Emission Spectra of Hydroxybenzaldehydes – A. É. Lyubarskaya, V. I. Minkin, and M. I. Knyazhanskii	58	71
PMR Spectra and Transmission of the Influence of Substituents in Chalcols and Their Thiophene Analogs – M. S. Pivnenko, L. M. Grin, R. I. Pogonina, and V. F. Lavrushin	64	78
Investigation of the Solvation of the Cobalt Ion in a Homologous Series of Alcohols with the Aid of the Electronic Absorption Spectra – I. I. Antipova-Karataeva and N. N. Rzhevskaya	69	84
Self-Consistent Calculation for Atoms by the Method of Expansion in Terms of a Basic Function. Selection of Gaussian Basic Functions – M. D. Dolgushin	74	91
Interpretation of the Relation between Half-Wave Polarographic Potentials and the Structure of Organic Compounds – L. I. Lagut-skaya and V. A. Dadali	79	97
BRIEF COMMUNICATIONS		
Heats of Complexing Reactions of Rare Earth Elements at Various Temperatures – K. B. Yatsimirskii and N. A. Kostromina	85	104
Reactivity of π- and p-Donor Complexes of Iodine in the Iodocyclization of α-(ω-Butenyl)-pyridine in Carbon Tetrachloride – Yu. A. Serguchev and E. A. Shilov	89	108
The Effect of Additions on the Catalytic Properties of Copper Oxide – É. Ya. Markiv and Ya. B. Gorokhovatskii	91	110

	Engl./Russ.	
Isomeric $(M-H)^+$ Ions in the Mass-Spectra of Molecules from the Surface Ionization of Dimethylbenzylamine on Oxidized Tungsten – E. Ya. Zandberg and U. Kh. Rasulev	95	114
The Influence of Fe^{3+} Ions on the Second Moment of the NMR Line of the Protons of the Hydroxide Groups in Layer Aluminosilicates – Yu. V. Shulepov, V. V. Mank, and Yu. I. Tarasevich	98	117
A Spectrophotometric Study of Cobalt(II) Chloride in Alcohol Solutions – I. I. Antipova-Karataeva and N. N. Rzhevskaya	101	121
A Method of Investigating Raman Scattering of Light by Systems of Fused Salts – S. V. Volkov, N. P. Evtushenko, and S. P. Baranov	105	124
The Role of Intermolecular Hydrogen Bonds in the Decomposition of Hydrocarbon Hydroperoxides – O. P. Yablonskii, V. F. Bystrov, V. A. Belyaev, and A. N. Vinogradov	109	129
BOOK REVIEW		
I. B. Bersuker. Structure and Properties of Coordination Compounds. Introduction to the Theory. Reviewed by N. D. Sokolov	112	132

Volume 8, Number 2 March-April, 1972

Transitions between the 2s and 2p States of Atomic Hydrogen in Collisions with Slow Noble Gas Atoms – A. S. Kompaneets	115	147
Role of Mesomeric and Inductive Interaction in the Manifestation of a Positive Bridge Effect – V. A. Dadali, L. M. Litvinenko, and N. G. Korzhenevskaya	121	154
Correlation Characterization of Vibrational Spectra with Parameters of Electronic Interaction of Functional Groups – A. E. Lutskii, G. G. Sheina, S. V. Semenenko, and A. V. Belous	127	162
Electron-Acceptor Properties of Tetracoordinated Phosphorus in Intermolecular Interactions – Yu. P. Egorov, E. V. Ryl'tsev, and A. S. Tarasevich	134	169
Breakdown of Maxwellian Distribution in a Reacting Single-Component System Immersed in an Inert-Gas Thermostat – S. N. Lebedev and A. I. Osipov	140	176
Generalized Forces and Generalized Flows in Nonequilibrium Thermodynamics – R. V. Kucher, S. Ya. Aleksandrova, and E. S. Kotelevets	145	182
Statistical Evaluations of the Parameters of Kinetic Equations from an Analysis of the Concentrations of Key Substances – Yu. S. Snagovskii, G. M. Ostrovskii, and I. I. Malkin	151	189
The Dependence of the Yields of the Products of Chemical Stabilization on the Initial Energy of the Particles Bombarding a Target – L. P. Firsova and A. V. Krasnyanskii	157	196
Proton Exchange in Hydrazine Derivatives – E. V. Titov, L. M. Kapkan, and A. Yu. Chervinskii	163	202
Investigation of Complexes of Lanthanum, Yttrium, and Lutetium with Hydroxyethylethylenediaminetriacetate by the NMR Method – É. Bryukher and N. A. Kostromina	170	210
Quantum-Mechanical Study of the Effect of Lattice Defects in Atomic and Ionic Crystals on the Adsorption of Hydrogen – S. G. Gagarin, Yu. A. Kolbanovskii, and L. S. Polak	175	216
Structure and Reactivity of 2-Phenyl-3-oxypyridine – V. T. Grachev, V. N. Kostylev, B. E. Zaitsev, V. I. Kuz'min, K. M. Dyumaev, and L. D. Smirnov	182	224
BRIEF COMMUNICATIONS		
Dipole–Dipole Interaction and Vibrational Oscillations in Hydrogen Bonds – A. E. Lutskii and S. N. Vragova	187	230
Evaluating the $p_\pi - d_\pi$ Contribution to the Phosphorus Atom in Symmetrically		

	Engl.	Russ.
Substituted Phosphines – A. S. Tarasevich and Yu. P. Egorov	192	235
Mechanism and Kinetics of Hydrogenation of Phenol on a Palladium Catalyst – Yu. S. Snagovskii, M. M. Strelets, and G. D. Lyubarskii	195	238
The Mechanism of Catalytic Dehydrogenation of Isoamylenes in the Presence of Oxygen – S. G. Gagarin, R. R. Aliev, M. I. Yanovskii, N. I. Kholdyakov, and A. K. Zhomov	200	244
The Role of Complex Formation in the Oxidation of p-Phenetidine by Vanadium (V) Compounds – B. G. Zhelyazkova and K. B. Yatsimirskii	204	249
Study of the Kinetics and Mechanism of Rapid Proton Exchange between Thiophenol and Acetic Acid by the PMR Method – V. K. Pogorelyi, V. P. Prokopenko, and I. P. Gragerov	208	253
Study of Fast Reactions by a Single-Electron ESR Method in a Flow System – B. Ya. Medvedev, L. A. Polyakova, K. A. Bilevich, N. N. Bubnov, and O. Yu. Okhlobystin	211	256
A PMR Study of the Rotational Mobility of the Cyclopentadienyl Rings in Aromatic Metal Complexes – M. K. Makova, Yu. S. Karimov, N. S. Kochetkova, and E. V. Leonova	214	259
Investigation of the Structure of σ Complexes of 1-X-2,4-Dinitrobenzenes with Acetone–Potassium Hydroxide by the NMR Method – S. S. Gitis, Yu. D. Grudtsyn, É. A. Bronshtein, É. É. Gol'teuzen, and A. Ya. Kaminskii	216	261
PMR Spectra of Para-Substituted Styrenes and the Corresponding Aryl-gem-dihalocyclopropanes – A. K. Mal'tsev, A. J. Steinschneider, A. V. Kessenick, and O. M. Nefedov	219	265
Electronic Absorption and Emission Spectra of Anions and Protonated Forms of Hydroxybenzaldehydes – A. É. Lyubarskaya, V. I. Minkin, M. I. Knyazhanskii, and L. P. Olekhnovich	224	270
Effect of Substituents on the Spectroscopic Characteristics of the Amino Group of Aliphatic Amines – E. V. Titov and M. V. Poddubnaya	230	276

Volume 8, Number 3 May-June, 1972

	Engl.	Russ.
Spin Projection and Spin Properties of the Singlet State of Polyene–I. A. Misurkin and A. A. Ovchinnikov	235	291
Projection of the Wave Function of the Unlimited Hartree–Fock Method on the Doublet State in the Case of Benzyl Radical–I. I. Ukrainskii, Yu. A. Kruglyak, H. Preuss, and R. Yanoshek	242	299
Critical Effects in Gaseous Chemical Reactions–O. M. Sarkisov, Yu. M. Gershenzon, and V. I. Vedeneev	250	309
Stability of Systems with Autocatalytic Reactions–A. I. Lopushanskaya, P. M. Grigorishin, V. V. Nechiporuk, and M.G. Bzovyi	256	317
Photodissociation of Diatomic Molecules under Nonequilibrium Conditions – M. N. Safaryan	260	322
Kinetics of Chemical Polarization of ^{31}P Nuclei in Decomposition Reactions of Certain Peroxides–D. G. Pobedimskii, Yu. Yu. Samitov, É. I. Gol'dfarb, and P. A. Kirpichnikov	264	327
Spin–Lattice Relaxation in Organofluorine Liquids–A. V. Kessenikh, A. V. Ignatenko, and E. A. Nikiforov	268	332
Relationship between the Potential Barrier to Proton Transfer and the Heat of Formation of the Intermediate Complex in the Substituted Phenol–Aniline System – G. V. Sandul, V. S. Kuts, and V. D. Pokhodenko	275	340
K_α Band in the X-Ray Emission Spectrum of Nitrogen in $A^{III}B^{V}$-Type Nitrides and Some of Their Properties – N. N. Vasilenko, M. D. Lyutaya, E. A. Zhurakovskii, and I. N. Frantsevich	281	347

Eng./Russ.

Deuteron Magnetic Resonance Spectra of a Series of Compounds and Quadrupole-Bond Constants Deuterated of Pyridine—D. M. Kaminker, Yu. I. Neronov, and Z. Rakhimov 287 354
Acid-Base Properties of Dioxides of Tetraalkyl(Aryl)-Alkylenediphosphines —M. I. Kabachnik, E. I. Matrosov, T. Ya. Medved', S. A. Pisareva, and I. B. Romanova 293 361
Catalysis of the Interaction of Isocyanates with Aerosil by Pyridine and Its Derivatives —N. V. Kulik, L. A. Negievich, and A. A. Kachan 298 366

BRIEF COMMUNICATIONS

Application of Variation-Perturbation Theory for Polarizability Evaluation of Linear Polyatomic Molecules—N. P. Borisova and O. Castaño 303 372
The Electronic Structure of Diethyl Dithiocarbamate and Its Complex with Ni(II); Redistribution of Charges on Coordination and Electronic Spectra —D. V. Sokol'skii, I. B. Bersuker, S. S. Budnikov, L. M. Kurashvili, and I. A. Zavorokhina 306 374
Calculation of the $\pi\sigma$ and $\sigma\pi$ States of Planar Unsaturated Molecules by the CNDO CI Method—B. F. Minaev and A. F. Terpugova 311 380
Effect of σ-Electron Density Distribution in Alkylaromatic Peroxy Radicals on Their Reactivity—I. A. Oneida, A. F. Dmitruk, and R. V. Kucher 316 385
CNDO/2 Molecular Orbital Calculations on Several Models for n-π and π-π Complexes —A. F. Terpugova, I. V. Sokolova, and V. A. Khaustov 319 388
Study of Photosensitized Reactions of O,O'-Dihydroxyazo Compounds by Impulse Photolysis—L. N. Rygalov, A. V. Karyakin, and A. K. Chibisov 322 391
Oxidative Properties of the Surface of Sodium Faujasites—M. V. Kost', A. M. Eremenko, M. A. Piontkovskaya, and I. E. Neimark 327 396
Quantitative Separation of the Total Substituent Effect in Para-Substituted 10-Aryl-5,10-dihydrophenarsine Oxides—G. Kh. Kamai, B. D. Chernokal'skii, V. I. Gavrilov, V. M. Tsentovskii, and V. S. Tentovskaya 331 400
Chemical Shift of the $K\alpha_1$ Line of Sn and Ionic Character of the Bond in Tin Compounds —L. L. Makarov, Yu. P. Kostikov, and G. P. Kostikova 333 403
ESR Study of Structural Features of Complexes of Copper and Cobalt with Tetraphenylporphin and Tetraphenylporphin Sulfonate—V. V. Khrapov, S. F. Ginzburg, L. N. Burtseva, and V. I. Stanko 336 405
Electron—Nucleus Interactions in Cobalt and Nickel Dicyclopentadienyl—M. K. Makova, Yu. S. Karimov, and E. V. Leonova 340 409
Mössbauer Effect and the Chemical Bond in Compounds of Tin with Elements of the Fifth Group—V. T. Shipatov and P. P. Seregin 343 413
Methods of Calculating Internal-Rotation Barriers According to Data of Molecular Vibrational Spectra Taking into Account the Relation of the State of Chemical Bonds to the Angle of Rotation—G. M. Chplakhyan and V. P. Roshchupkin 346 416

DISCUSSIONS

The Nature of First Resonance in Electron Impact Excitation of Benzene —L. V. Iogansen 349 419
Discussions in Connection with A. S. Tarasevich and Yu. P. Egorov's Paper "P^{31} NMR Determination of the P = N Bond Order in Phosphazo Derivatives" —É. S. Kozlov and S. N. Gaidamaka 351 420
The Applicability of the Theory of Letcher and Van Waser to the Interpretation of the Chemical Shifts of P^{31} Nuclei in Organophosphorus Compounds (Reply to the Points Made by É. S. Kozlov and S. N. Gaidamaka)—Yu. P. Egorov and A. S. Tarasevich 353 422

Eng./Russ.

Volume 8, Number 4 July-August, 1972

Calculation of Spin Perturbations of Excited States – A. V. Luzanov and M. M. Mestechkin 357 435
Kinetics of the Decomposition of a Truncated Harmonic Oscillator under the Action of Intense Infrared Radiation – M. N. Safaryan 365 445
Calculation of the Electronic Structure of the Heterocyclic Ring in the Triphenylverdazyl Radical, the Corresponding Ions, and the Leuco Compound by the Extended Hückel Method – L. A. Kotorlenko and A. P. Gardenina 373 454
Equations for Cathodic Polarograms Taking Account of the Acid–Base Characteristics of Oxygen-Containing Molten Salts – Yu. K. Delimarskii and V. I. Shapoval 378 459
A Quantitative Interpretation of Experimental Data on Self-Ignition in the $D_2 + F_2 + Ar$ System – V. I. Vedeneev, V. I. Propoi, O. M. Sarkisov, and N. G. Fedotov 383 465
Isomolar Series Diagrams for Systems in the Nonequilibrium State – T. V. Mal'kova and V. D. Ovchinnikova 388 471
Photochemical Interactions of Excited Molecules of Chloranil with Polar Solvents – A. I. Kryukov and V. A. Krasnova 394 478
Spectrophotometric Study of the Short-Lived Products of the Photoreactions of Uranium(VI) – L. N. Rygalov, A. K. Chibisov, A. V. Karyakin, E. V. Bezrogova, B. F. Myasoedov, and A. A. Nemodruk 399 484
Fragmentation and Rearrangements of Ions of Esters in the Field Mass Spectrometer – M. M. Aleksankin, P. S. Dibrova, I. Z. Korostyshevskii, I. P. Samchenko, and L. I. Fileleeva 404 490
The Use of the Spin-Echo Method in the Study of Fast, Irreversible Reactions – V. V. Mank and A. P. Filippov 413 501
Raman Spectra and Structure of Complexes of Cobalt and Zinc in Fused Nitrates – K. B. Yatsimirskii, S. V. Volkov, and N. P. Evtushenko 418 506
Spectroscopic Investigation of Interactions between Heavy Water and Kaolinite Surfaces – I. A. Gribina and Yu. I. Tarasevich 423 512
The Problem Concerning the Delocalization of the Unpaired Electron in Diarylmethane Anion Radicals – S. P. Solodovnikov and M. I. Kabachnik 428 518
The Interaction of Substituents Containing Group IV-B Elements with the Benzene Ring – E. G. Ermakova, T. L. Krasnova, A. M. Mosin, and E. A. Chernyshev 433 524
Decomposition Mechanism of Hydrogen Peroxide in Organic Solvents – Yu. L. Spirin, V. K. Grishchenko, and G. I. Kochetova 440 532

BRIEF COMMUNICATIONS

Electronic Structure of Chloroalkyl Peroxides and Peculiarities of the Reactions of Their Hydrolysis – A. I. Litinskii, A. I. Shreibert, L. M. Z. Balyavichus, and A. B. Bolotin 446 539
Calculation and Interpretation of the Vibration Spectrum of the Benzyl Radical – V. I. Lutoshkin, L. A. Kotorlenko, and Yu. A. Kruglyak 449 542
The Application of a Simple One-Center Approximation to the Determination of the Harmonic Force Constants of the Silane and Methane Molecules – A. G. Lazarev, I. F. Kovalev, L. V. Belyavskaya, and V. P. Morozov 453 546
Calculation of the Nondiagonal Matrix Elements of the Hamiltonian Operator by the Extended Hückel Method – Yu. P. Nazarenko, Yu. I. Bratushko, and K. B. Yatsimirskii 457 550
Study of the Association of Hydroperoxides with Methyl Alcohol, Acetone, and Cyclohexanone by the NMR Method – I. F. Franchuk and L. I. Kalinina 460 553
Calculating Heat of Solution of Aromatic Compounds in a Stationary Nonpolar Phase – V. A. Kozlova, A. N. Korol', and S. L. Mel'nikova 465 558
A Study by Vibrational Spectroscopy of the Reaction of Halogens with Tetrahydrothiophene and Tetrahydroselenophene – Ya. M. Kimel'fel'd, A. B. Mostovoi, and N. N. Magdesieva 469 562

	Engl.	Russ.
Structure of the Free Radicals in Irradiated Single Crystals of the Hydrochloride of DL-α-Aminobutyric Acid – Yu. D. Tsvetkov and G. A. Almanov	473	566

Volume 8, Number 5 September-October, 1972

The Matrix Elements of Arbitrary Configurations of Nonorthogonal Orbitals in a State with a Given Spin – I. G. Kaplan and O. B. Rodimova	477	579
Quantum-Chemical Calculation of the Spin Density Distribution in an Aliphatic Chain – I. A. Abronin and G. M. Zhidomirov	486	589
The Nature of the Isotopic Change in the Length of the Hydrogen Bond – V. A. Savel'ev and N. D. Sokolov	494	598
Electron Structure and Properties of Platinum Nitrosochlorotetramines – V. I. Baranovskii, O. V. Sizova, A. I. Stetsenko, and V. M. Kiseleva	499	604
Electronic Structure of Phosphorus Isocyanates – Yu. P. Egorov, A. A. Kisilenko, and V. V. Pen'kovskii	505	612
Symmetry Rules and Mechanisms for Coordination-Compound Reactions – K. B. Yatsimirskii	509	617
Calculation of the Probability of the Elementary Acts Characterizing Chemical Transformations in Polar Liquids – É. D. German, Z. D. Urushadze, and V. K. Khidureli	512	621
The Stripping Mechanism in the Simplest Ion–Molecule Reactions – P. A. Vrunov, V. A. Kaminskii, and S. F. Timashev	518	628
Kinetics of Nonstationary Catalytic Reactions with Two Intermediates – V. M. Belousov and I. D. Rokos	524	635
The Kinetics and Reaction Mechanism for the Oxidation of para-Phenetidine by Vanadium (V) Compounds – K. B. Yatsimirskii and B. G. Zhelyazkova	529	641
The Green Function and Surface Zones of Crystals with Graphite-like Structure – R. S. Gordenko and I. D. Mikhailov	533	646
Calculated Chemical Shifts of ^{19}F Nuclei in Ortho-Substituted Fluorobenzenes – V. K. Mukhomorov	538	651
Some General Principles in the Mass Spectra of Nitrogen-Containing Organic Compounds by Surface Ionization on Oxidized Tungsten – É. Ya. Zandberg and U. Kh. Rasulev	544	658
The Effect of Added Impurities on the Electronic and Catalytic Properties of Copper Oxide – É. Ya. Markiv and Ya. B. Gorokhovat-skii	550	665
BRIEF COMMUNICATIONS		
Separation of the Variables Illustrated by the Example of the Three-Body Problem – N. F. Stepanov and B. I. Zhilinskii	555	672
Effect of Electron Density Redistribution during Coordination on the Acid–Base Properties of Co (III) Dioximines – S. S. Budnikov, B. A. Bovykin, and A. S. Dimoglo	559	676
Local Paramagnetic Contribution to the Nuclear Magnetic Shielding Constant of ^{13}C Nuclei – V. N. Solkan, N. M. Sergeev, and Yu. A. Ustynyuk	562	679
Investigation of the NMR Spectra of Complexes of Halides of p and d Elements of the Fourth Group with Ligands Containing Labile Halogen – Yu. A. Lysenko, A. N. Vedmedskaya, and L. M. Kapkan	565	681
NMR Study of Association of Thiophenol with Various Electron Donors – V. K. Pogorelyi and I. I. Kukhtenko	568	684
Investigation of the Intramolecular Hydrogen Bond in β-Diketones of the Selenophene Series by the NMR Method – L. N. Kurkovskaya, N. N. Shapet'ko, and N. N. Magdesieva	572	688
Study of Iodobenzoic Acids and B-Iodobarenes Labeled with ^{125}I, Using Nuclear Gamma Resonance (NGR) Emission Spectroscopy – V. V. Bochkarev, E. P. Stepanov, V. V. Khrapov, V. I. Stanko, V. V. Sklyarevskii, G. M. Lukovkin, N. G. Iroshnikova, V. A. Brattsev, and T. N. Vostrikova	575	691

Disturbance of p,π Conjugation in Aromatic Amines during Interaction with Carboxylic Acids – I. P. Gol'dshtein, A. I. Serebryanskaya, T. I. Perepelkova, E. N. Gur'yanova, and A. I. Shatenshtein 579 695
The Durability of the Acid Residue of Some Oxygen Acids – R. B. Dobrotin. 583 700
A Definition in Thermodynamics of the Standard States of Pure Substances and Solutions – A. F. Vorob'ev. 587 705
Structure of 1,4-Diphenylperfluorobutadiene – Yu. P. Egorov, V. A. Khranovskii, and Z. G. Kudritskaya 591 709
Raman Spectrum of Hexagonal Boron Nitride – I. L. Babich 594 712

Volume 8, Number 6 November-December, 1972

The Effects of Nonorthogonality in Calculations of Potential Surfaces – M. V. Bazilevskii and V. A. Tikhomirov 597 723
Potential Surfaces for Addition Reactions of Ionic π Systems – M. V. Bazilevskii and V. A. Tikhomirov 601 728
The ESR Spectra of Systems with an Electronically Degenerate T Term. The Influence of the Electric Field – I. B. Bersuker, B. G. Vekhter, and M. L. Rafalovich. 609 739
A Theoretical Study of Primary Hydrated Li^+, Na^+, and K^+ Ion Complexes – D. A. Zhogolev, Yu. A. Kruglyak, B. Kh. Bunyatyan, and I. V. Matyash 614 745
The Influence of Temperature of the Ionization Probabilities of Molecules – V. A. Vlaskov and A. A. Ovchinnikov 620 754
Dipole Moments of Derivatives of Phosphoric Acids – Yu. P. Egorov, V. I. Katolichenko, Yu. Ya. Borovikov, N. G. Feshchenko, and B. Ya. Semenii . . . 626 761
Field Mass Spectra of Ethers – M. M. Aleksankin, I. Z. Korostyshevskii, P. S. Dibrova, L. I. Fileleeva, I. P. Samchenko, and I. V. Gol'denfel'd 634 770
The Principles of Field Dissociation of Nitriles – I. Z. Korostyshevskii, M. M. Aleksankin, L. I. Fileleeva, V. N. Koval'chuk, and I. V. Gol'denfel'd 640 777
Stoichiostochastic Analysis of Composite Equilibria – Yu. M. Potashnikov and I. I. Kusel'man 646 784
Quantum Effects of Anisotropic Rotation in the ESR of the Methyl Radical – O. I. Brotikovskii, G. M. Zhidomirov, and V. B. Kazanskii 653 792
An Investigation of the Adsorption of CO and NH_3 onto Vanadium Pentoxide Supported on Silica Gel by ESR and IR Spectroscopy – A. I. Mashchenko, M. Ya. Kon', V. A. Shvets, and V. B. Kazanskii 660 801

BRIEF COMMUNICATIONS

Study of the Reaction of Isocyanates with Hydroperoxides and Alcohols on the Basis of an Analysis of Their Electronic Structure – A. O. Litinskii, A. I. Shreibert, L.-M. Z. Balyavichus, and A. B. Bolotin 665 807
Suppression of Exchange Interaction in Systems with Electron Degeneration – B. G. Vekhter 669 811
The Use of Alternating-Current Polarography to Study Fused Salts – Yu. K. Delimarskii, N. Kh. Tumanova, and M. U. Prikhod'ko 671 813
The Immediate Solvation of Ions in Ketones at 25°C – B. S. Krumgal'z 674 817
Calculation of the Molecular Volumes Used in Estimating Immediate Ion Solvation – B. S. Krumgal'z, I. V. Kudryavtseva, and K. P. Mishchenko 676 819
Hydrogen Bond and the Kinetics of Hydrogen Isotope Exchange in NH, OH, and SH Groups in Solution – G. S. Denisov and A. E. Semenova 679 822
The H_- Acidity Function for Lithium tert-Butylate in tert-Butanol in the Presence of Phosphine Oxides – F. S. Yakushin, V. A. Marchenko, and A. I. Shatenshtein . . . 682 825
Transformations and Electronic Structure of Fe-Phthalocyanine Monoanion – A. N. Sidorov and V. G. Maslov 685 828

Eng./Russ.

PMR Investigations of the Mutual Effect of Donor Groups in Polydentate Ligands – N. A. Kostromina 688 831
A Mössbauer Spectroscopic Investigation of the Electronic Structure of Acetylenic Organotin Compounds – O. A. Zasyadko, V. Ya. Rochev, R. A. Stukan, R. G. Mirskov, and Yu. L. Frolov 692 836
ESR Spectra of Oxygen Photosorbed on Reduced and Oxidized Zinc Oxide – L. V. Lyashenko, Ya. B. Gorokhovatskii, L. N. Ganyuk, and I. A. Ustinov 696 840
An Investigation of the Structure of Chalcogenide Glasses by GR Spectroscopy – R. A. Stukan, G. A. Yurlova, V. V. Gorbachev, and V. A. Linskii 700 844

INDEX
Author Index, Volume 8, Numbers 1-6, 1972 705
Tables of Contents, Volume 8, Numbers 1-6, 1972 709